

REMARKS

Claims 1-22 are pending. Claim 21 has been withdrawn from consideration. Claims 1, 10, 20 and 22 are currently amended.

Independent claims 1, 10, 20, and 22 have been amended to include the terms “that conveys the array of sealed flexible polymeric pouches.” Support for this amendment can be found on page 10, lines 30-32 and page 11, line 30 – page 12, line 3.

A Request for Continued Examination (RCE) accompanies this response.

Entry of the amendments and reconsideration of the present application are respectfully requested.

§ 102 Rejections

Claim 20 is rejected under 35 USC § 102(b) as being anticipated by Neukermans (WO 97/22825). Independent claim 20 has been amended. Applicants submit that claim 20 is novel over this reference.

Claim 20 provides a continuous method for synthesizing an array of polymers. The continuous method includes providing an array of sealed flexible polymeric pouches. Each pouch is attached to a conveyance apparatus that conveys the array of sealed flexible polymeric pouches. Each pouch contains a same first reactant and a same second reactant so that at least a first pouch and a second pouch contain a similar volume ratio of first reactant to second reactant. The continuous method includes conveying the array of sealed flexible polymeric pouches through a reaction zone exposing the first pouch to a first set of reaction conditions and exposing the second pouch to a second set of reaction conditions. The first set of reaction conditions is different than the second set of reaction conditions, and cause the first reactant in each pouch to react with the second reactant in each pouch to produce an array of polymers.

Neukermans discloses a microfluidic valve(s) as a building block in assembling microfluidic systems for synthesizing an array of polymers.

In the Office Action on page 8 (item [4] The Examiner...), the Examiner has asserted that the “array of sealed polymeric flexible pouches, each pouch attached to a conveyance apparatus”

does not address the movement of pouches for step (a) of claim 20. The Examiner further admits that the conveyance apparatus could address the movement of any materials including water, PCR reactants and the like. Amended claim 20 describes the conveyance apparatus for conveying the array of sealed polymeric flexible pouches through a reaction zone. Neukermans conveys materials, not pouches from one location to another as stated on the top of page 10 of the 03/05/2008 Applicant's response. Neukerman fails to describe a conveyance apparatus that conveys the array of sealed flexible polymeric pouches through the reaction zone.

In the Office Action on page 10 (item [6] Claims are to be given...), the Examiner has asserted that the reaction chambers 198 of Neukermans are conveyed (i.e., moved from one place to another) through the reaction zones. Applicants respectfully disagree. Reaction chambers 198 of Neukermans are not conveyed, but rather attached to a support. The individual flexible pouches of the present application are reaction vessels (page 6, lines 13-14) conveyed through a reaction zone. Neukermans discloses conveying materials of reaction chambers 198 between reaction zones T1 and T2 with applied pressure from pistons 202. Neukermans does not convey sealed flexible polymeric pouches with a conveyance apparatus of the present application. Neukermans fails to disclose a conveyance apparatus that conveys the array of sealed flexible polymeric pouches through a reaction zone exposing the first pouch to a first set of reaction conditions and exposing the second pouch to a second set of reaction conditions.

For at least the foregoing reasons, Neukermans does not disclose or suggest each and every feature of the present invention, and the rejection of claim 20 under 35 USC § 102(b) as being anticipated by Neukermans should now be withdrawn.

§ 103 Rejections

Claims 1-20 and 22 are rejected under 35 USC § 103(a) as being unpatentable over Neukermans (WO 97/22825) in view of McPherson et al. (PCR M. J. McPherson and S.G. Moller. BIOS Scientific Publishers, Oxford. 2000, pages 9-21 and 67-87). Independent claims 1, 10, 20 and 22 have been amended. Pending claims 2-9 are dependent on amended independent

claim 1. Pending claims 11-19 are dependent on amended independent claim 10. Applicants submit that pending claims 1-20 and 22 are not made obvious by these references.

Claim 1 provides a continuous method for synthesizing an array of polymers. The continuous method includes providing an array of sealed flexible polymeric pouches. Each pouch is attached to a conveyance apparatus that conveys the array of sealed flexible polymeric pouches. Each pouch contains a same first reactant and a same second reactant wherein at least one pouch contains a different volume ratio of a first reactant to a second reactant. The continuous method includes conveying the array of sealed flexible polymeric pouches through a reaction zone to cause the first reactant in each pouch to react with the second reactant in each pouch to produce an array of polymers.

Claim 10 provides a continuous method for synthesizing an array of polymers. The continuous method includes providing an array of sealed flexible polymeric pouches. Each pouch is attached to a conveyance apparatus that conveys the array of sealed flexible polymeric pouches. Each pouch contains a same first reactant and a same second reactant wherein at least one pouch contains a different volume ratio of first reactant to second reactant, and each pouch contains a captive pouch. The continuous method includes conveying the array of sealed flexible polymeric pouches through a reaction zone to cause the first reactant in each pouch to react with the second reactant in each pouch to produce an array of polymers.

Claim 20 has been described above.

Claim 22 provides a continuous method for synthesizing an array of polymer mixtures. The continuous method includes providing an array of sealed flexible polymeric pouches. Each pouch is attached to a conveyance apparatus that conveys the array of sealed flexible polymeric pouches. Each pouch contains a same first polymer and a same second polymer so that at least one pouch contains a different volume ratio of first polymer to second polymer. The continuous method includes conveying the array of sealed flexible polymeric pouches through a mixing zone to cause the first polymer in each pouch to interact with the second polymer in each pouch to produce an array of polymer mixtures.

Neukermans has been described above.

The addition of McPherson et al. does not overcome the deficiencies of Neukermans. McPherson describes a polymerase chain reaction (PCR) as a technique for in vitro amplification of specific DNA sequences by the simultaneous primer extension of complimentary strands of DNA to produce numerous copies of DNA (page 1 of McPherson). However, McPherson fails to disclose continuous methods for synthesizing an array of polymers (claims 1, 10, and 20) or polymer mixtures (claim 22) by the methods described in claims 1, 10, 20, and 22 of the present application.

In the above referenced claims, McPherson does not teach or suggest providing an array of sealed flexible polymeric pouches where each pouch is attached to a conveyance apparatus that conveys the array of sealed flexible polymeric pouches. Further, McPherson does not describe conveying the array of sealed flexible polymeric pouches through a reaction zone. Therefore, claims 1, 10, 20 and 22 are not obvious over Neukermans in view of McPherson.

Neukermans in view of McPherson fails to satisfy the Office's burden of establishing a prima facie case of obviousness. Applicants request that the rejection of claims 1-20 and 22 under 35 USC § 103(a) as being unpatentable over Neukermans in view of McPherson be withdrawn.

CONCLUSION

In view of the above, it is respectfully submitted that claims 1-20 and 22 are in condition for allowance. If any issues or questions remain, the resolution of which the Examiner feels would be advanced by a conference with the Applicant's agent, the Examiner is invited to contact the agent at the telephone number noted below.

Respectfully submitted,

09/05/2008

Date

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